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ABSTRACT

This training manual is intended to aid in the design of physical environments to make them accessible to individuals with all kinds of disabilities. Three separate sections each contain a training agenda, learning objectives, workshop content (with side notes to the trainer in italics), overheads, and handouts. Preliminary information includes module purpose and overall learning objectives, a module outline, materials needed for the workshop, and adaptations for individuals with disabilities. The first content section is on public policy. It considers, first, the Americans with Disabilities Act (ADA), including its definition of disability requirements concerning employment, state and local government, and public accommodations. It also describes Section 504 of the Rehabilitation Act and gives ADA accessibility guidelines. The second section deals with steps needed to determine accommodations. These include analyzing requirements, consulting with the individual involved, and identifying possible accommodations. The third section looks at types of accommodations, organized according to the categories of visual, auditory, physical, or computer-based adaptations. (DB)

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CREATING EMPLOYMENT OPPORTUNITIES

ACCESSIBILITY AND ACCOMMODATIONS

Missouri inc

Martha Wille Gregory, Editor

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Accessibility and Accommodations

Directions for Use

The following information was written for the purpose of training people who have an interest in making facilities accessible for work, education, and recreation. The material was written to include information on public policy, such as the Americans with Disabilities Act (ADA), and methods and devices which would allow for the universal design of all environments.

The material was written from the perspective that an environment is or is not accessible. Accessibility for one area of disability does not excuse non-accessibility for another area of disability. For example, putting ramps in a building but not providing braille signage means the facility is not acceptable.

The material can be adapted to meet a variety of training needs. The training modules contains large amount of information and trainers will need to tailor the information presented to the audience needs and the time limitation with which they are working.

Learning objectives:

1. Overview the Americans with Disabilities Act, specifically Title I, II, and III and Section 504 of the Rehabilitation Act.
2. Review steps necessary to consider when providing a reasonable accommodation, or auxiliary aids and services.
3. Become aware of a variety of accommodations ranging from simple to complex, expensive technology.

Below is an outline of the module.

I. Introduction
   - A. Purpose
   - B. Objectives/Agenda

II. Public Policy
   - A. Americans with Disabilities (ADA)
     - ●Definition of a Disability
     - ●Title I —Employment
     - ●Title II —State and Local Government
     - ●Title III —Public Accommodations
   - B. Section 504 of the Rehabilitation Act
   - C. ADA Accessibility Guidelines

III. Steps to Determine Accommodations
   - A. Steps to Determine Accommodations
     - ●Analyze
     - ●Consult
     - ●Identify

IV. Types of Accommodations
   A. Accommodations
      - Visual
      - Auditory
      - Physical
      - Computer-Based Adaptations

V. Conclusion

The *Accessibility and Accommodations* module differs somewhat from the other modules, in that we have indicated three separate sections. These sections can be used separately or together. Each section consists of an agenda and learning objectives.

This module contains handouts, overheads, and slides, used to enhance important points. On the right side of the page there are cues to the trainer on when to use and refer to the overheads, handouts, and slides. Notes and examples that are provided to the trainer are in *italicized* script. This text is not to be read aloud to the audience, but used as a tool for the trainer.

MATERIALS NEEDED FOR THE WORKSHOP:
- Sign-up list
- Folder packets for handouts
- Pencils/pens
- Name tags (optional)
- Overhead projector/projector screen
- Slide projector
- Video equipment (if recording the training session)
- Podium
- Food/Drink (optional)

WHEN CONDUCTING THE TRAINING:
- Have fun, be relaxed. Allow for interaction.
- Begin and end on time.

WHEN USING THE EQUIPMENT:
- When using the overhead, use a sheet to cover information until it is disclosed.
- Use a pointer or pen for pointing to information.

ADAPTATIONS FOR INDIVIDUALS WITH DISABILITIES:
- Make sure all participants are included in the activities.
- Make available, if necessary, large print, braille, or taped copies of the presentation.
- Ask the individual what type of accommodation is needed.
- Repeat questions from the audience.
- Speak to the audience in a normal voice.
- If not using the overhead, turn it off. It can be distracting.

I. Introduction

A. Purpose

More than 43-million people in the United States are living with disabilities. Some have disabilities that are more severe or more long lasting than others. But the simple fact is that every family, and virtually every individual, is affected by the experience of disability at some point in their lives.

Accessibility means that people of all ages and abilities can enter and function independently in facilities as customers, employees, and employers. When an environment has been made truly accessible, there is a realization that people interact with their environment differently and that other options are available to allow for operational differences.

Accessibility includes physical, communication, and program accessibility. Physical accessibility refers to the design and layout of the facility. Communication accessibility focuses on the manner in which information is delivered (through signage, materials, technology, and interpersonal exchanges). Program accessibility addresses accommodations in the procedures by which a covered entity operates [Overhead #1]. Accessibility is not fully achieved until all three of the above areas are addressed.

Overhead #1
Types of
Accessibility

Inherent in the concept of accessibility is the consideration of universal design. Universal design embraces the theory that if that environments are designed to be ergonomically correct, the design will enhance accessibility for all. For example, automatic doors have been installed for people with physical disabilities but are functionally useful for a parent with a baby stroller or for a traveller with baggage. Realtime captioning may be necessary for a person who is deaf, but it also allows for the recording of minutes, eliminating the need for a secretary-recorder.

Accessibility has not been a reality for people with disabilities. There continues to be many barriers, both physical and attitudinal, which need to be overcome for true accessibility to become a reality. There are accessibility features which, under past policy, should have been addressed in many public and private facilities but which have not. Some examples are: the physical access to buildings achieved through required ramps, and communication access to programs achieved through the use of interpreters and through large print materials.

Public entities must have achieved program accessibility by January 26, 1992. If structural changes are needed to achieve program accessibility, they must be made as expeditiously as possible, but in no event later than January 26, 1994. This three-year period is not a grace period. All changes must be accomplished as soon as possible. A public entity that employs 50 or more persons must have developed a transition plan by July 26, 1992, setting forth the steps necessary to complete such changes.

B. Objectives

Handout #1
Objectives/
Agenda

1. Learn the definitions for the following terminology, as they are used in reference to the Americans with Disabilities Act: person with a disability, employer, qualified individual, essential functions, reasonable accommodations, auxiliary aids and services, and covered entity for Title I, II, and III.

2. Learn how each title of the Americans with Disabilities Act impacts on the provision of accommodations for people with disabilities.

3. Learn the definitions for the following terminology as it is used in reference to Section 504 of the Rehabilitation Act: person with a disability, equal access, and reasonable accommodations.

4. Learn how Section 504 of the Rehabilitation Act impacts on the provision of accommodations for people with disabilities.

5. Become aware of the variety of assistive technology from simple and low cost accommodations to more expensive and technical accommodations.

6. Become aware that the accommodation needed is individualized, depending upon the person's disability and the environment.

II. Public Policy

The two major pieces of public policy which will be discussed during this workshop are the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act (Section 504). These pieces of legislation have had the most profound impact on how different settings will provide for differences in the manner in which people interact with the environment.

A. Americans with Disabilities Act (ADA)

Overhead #2
ADA

The ADA is a federal civil rights statute designed to remove barriers which prevent qualified individuals with disabilities from enjoying the same opportunities that are available to persons without disabilities. The ADA provides for equality of opportunity, but does not guarantee equality of results. The foundation of many of the specific requirements in the regulations is the principle that individuals with disabilities must be provided an equally effective opportunity to participate in or benefit from an agency's services. The ADA has four titles. Title I deals with employment accommodations; Title II addresses accommodations of public services such as state and local government; Title III covers public accommodations; and, Title IV deals with telecommunications. The activities of any one agency may be covered under one or more titles.

Definition of a Disability

Overhead #3
Person
w/Disability

It is important that we understand what is covered under ADA and what the definition of a disability is. A person with a disability remains essentially the same for the purpose of all of the titles of the ADA. The definition of the term "disability" is divided into three parts. An individual must satisfy at least one of these parts in order to be considered an individual with a disability. An individual is considered to have a "disability" if that individual either:

1. has a physical or mental impairment which substantially limits one or more of that person's major life activities;
2. has a record of such impairment; or,
3. is regarded by the covered entity as having such an impairment.

Major life activities means functions such as caring for oneself, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, and working.

Whether a person has a disability is to be assessed without regard to the availability of accommodations, such as reasonable modification, auxiliary aids and services, services and devices of a personal nature, or medication.

To the trainer: An example might be, a person with a severe hearing loss is substantially limited in the major life activity of hearing, even though the loss may be improved through the use of a hearing aid. Likewise, persons with impairments, such as epilepsy or diabetes, that if untreated, would substantially limit a major life activity, are still

individuals with disabilities under the ADA, even if the consequences of the impairment are controlled by medication.

Title I: Employment

Overhead #4
Compliance Dates

In general, the term **employer** means a person engaged in commerce. Employers with 25 or more employees need to have been in compliance since July 26, 1992, and those with 15 or more employees by July 26, 1994.

Overhead #5
Requisite Skills

A **qualified individual** with a disability means an individual with a disability who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position the individual holds or desires, and who, with or without reasonable accommodations, can perform the essential functions of such a position.

Overhead #6
Essential functions

Essential functions of a job, in general, means the fundamental job duties of the employment position the individual with a disability holds or desires. A job function may be considered essential for any of several reasons, including but not limited to the following. The function may be essential because:

1. the position exists to perform that function;
2. a limited number of employees are available among whom the performance of that job function can be distributed; and/or
3. it may be highly specialized so that the person in the position is hired for his or her expertise or ability to perform the particular function.

Overhead #7
Accommodations

Reasonable accommodations are defined in Title I of the ADA as modifications or adjustments:

to a job application process
An example is: Providing an application form in large print format or providing a person to read the application questions.

to the work environment
For example: Providing an alternative keyboard to a person who cannot access the standard keyboard or assigning another person to write notes, if it is not an essential function of the job.

to the manner or circumstances under which the position customarily is performed
An example is: Using a cart to move objects rather than hand carrying them.

to provide for equal benefits and privileges of employment
For example: Providing an assistive listening during a staff meeting device for an employee who is hard-of-hearing.

An employer covered by Title I of the ADA is obligated to make reasonable accommodations to the known physical or mental limitations of an otherwise qualified individual with a disability unless to do so would impose undue hardship.

Determination of a reasonable accommodation is a cooperative process between the employee and employer. Employers are not required to provide accommodations that are personal in nature and assist the individual throughout daily activities such as wheelchairs, eyeglasses, and hearing aids. Reasonable accommodations are job related and specifically assist the individual to perform the duties of the job.

Reasonable accommodations do not have to be the "best accommodations" so long as they are sufficient to meet the job related needs of the individual. Once an employee has requested an accommodation, the employer must make an effort to determine the appropriate accommodation for the given job. While the accommodation preference of the person with a disability should be determined, the employer providing the accommodation has the discretion to choose between equally effective accommodations.

While many accommodations, such as job restructuring or job rescheduling, can be provided with no technology resources there are situations which will require the use of alternative methods of doing a task. This may involve considering the use of assistive technology.

An employer or other covered entity is not required to provide an accommodation that will impose an undue hardship on the operation of the employer's or other covered entity's business. An **undue hardship** means a significant difficulty or expense in, or resulting from, the provision of the accommodation. The undue hardship provision takes into account the financial realities of the particular employer or other covered entity. Undue hardship, in addition to financial difficulty, refers to an accommodation that would be unduly costly, extensive, substantial or disruptive, or that would fundamentally alter the nature or operation of the business.

Overhead #8
Undue Hardship

For example, suppose an individual who has a visual impairment that makes it extremely difficult to see in dim lighting applies for a position as a waiter in a nightclub and requests that the club be brightly lit as a

reasonable accommodation. Although the individual may be able to perform the job in bright lighting, the nightclub will probably be able to demonstrate how that particular accommodation, though inexpensive, would fundamentally alter the business, since the bright lighting would destroy the ambience of the nightclub and/or make it difficult for the customers to see the stage show.

Title II — State and Local Government

Title II of the ADA covers programs, activities, and services of public entities. "Public entities" include any state of local government and any of its departments, agencies, or other instrumentalities. Al activities, services, and programs of public entities are covered including State legislatures and courts, town meetings, police and fire departments, motor vehicle, licensing and employment. Most of the requirements of Title II are based on Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of disability in federally assisted programs and activities. It extends the prohibition of discrimination on the basis of disability established by Section 504 of the Rehabilitation Act of 1973, as amended, to all activities of state and local governments, including those that do not receive federal financial assistance.

A **qualified individual** with a disability must meet the essential eligibility requirements for receipt of services or participation in a public entity's programs, activities, or services with or without:

Overhead #9
Qualified individual

1. Reasonable modifications to a public entity's rules, policies or practices.

   The essential eligibility requirements for participation in many activities of public entities may be minimal.

To trainer: For example, most public entities provide information about their programs, activities, and services upon request. In such situations, the only eligibility requirement for receipt of such information would be the request for it. For a person who is blind, the request might be for the information in a braille format.

   However, under other circumstances, the essential eligibility requirement imposed by a public entity might be quite stringent.

To Trainer: For example, a medical school at a public university may require those admitted to its program to successfully compete specified undergraduate science courses.

2. Removal of architectural, communication, or transportation barriers.

   Public entities, under Title II, are not required to remove barriers from each facility, even if removal is readily achievable. A public entity must make its "programs" accessible. Physical changes to a building are required only when there are no other feasible ways to make the program accessible.

   Public entities may achieve program accessibility by a number of methods. In many situations, providing access to facilities through structural methods, such as alteration of existing facilities and acquisition or construction of additional facilities, may be the most efficient method of providing program accessibility. The public entity may, however, pursue alternatives to structural changes in order to achieve program accessibility. Non-structural methods include acquisition or redesign of equipment or provision of services at alternate accessible sites.

To Trainer: For example, a public university that conducts a course in an inaccessible building may relocate the course to a building that is readily accessible.

Another example: A library's open stack is located on upper floors having no elevator. As an alternative to installing a lift or elevator, library staff may retrieve books for students who use wheelchairs. The services must be available during the operating hours of the library.

When choosing a method of providing program access, a public entity must give priority to the one that results in the most integrated setting appropriate to encourage interaction among all users, including individuals with disabilities. A primary goal of the ADA is the equal participation of individuals with disabilities in the "mainstreaming" of American society.

The major principles of mainstreaming are:

a. Individuals with disabilities must be integrated to the maximum extent appropriate.
b. Separate programs are permitted where necessary to ensure equal opportunity. A separate program must be appropriate to the particular individual.
c. Individuals with disabilities cannot be excluded from the regular program, or be required to accept special services or benefits.

3. Provision of auxiliary aids and services.

Auxiliary aids and services include a wide range of services and devices that promote effective communication. In many situations, auxiliary aids and services are pieces of assistive technology.

A public entity must ensure that its communications with individuals with disabilities are as effective as communications with others. This obligation, however, does not require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of its services, programs, or activities, or in additional financial and administrative burdens. In order to provide equal access, a public accommodation is required to make available appropriate auxiliary aids and services where necessary to ensure effective communication.

Slides

Examples of auxiliary aids are:

Interpreter
Computer-aided recorder
Handset amplifiers
Assistive Listening system
Closed Caption Decoder
TT

To Trainer: The following are auxiliary aids for hearing and visually impaired. Slides may be used to illustrate the technology. There is a slide to illustrate the devices when an asterisk (*) proceeds the device. Show slides of the above devices and activities.

The devices listed are examples of accommodations and should not be viewed as the only possible accommodation. Also, the devices may change with increasing technology and are not being endorsed by the project. The following methods of making aurally delivered materials available to individuals with hearing impairments may include: *qualified interpreters, notetakers, *computer-aided transcription services, written materials *telephone handset amplifiers, *assistive listening devices, *telephones compatible with hearing aids, *closed caption decoders, *open and closed captioning, *telecommunications devices for people who are deaf, videotext displays and exchange of written notes.

Methods of making visually delivered materials available to individuals with visual impairments include: *magnification devices, qualified readers, taped tests, audio recordings, *braille material, *large print materials, and assistance in locating items.

The type of auxiliary aid or service necessary to ensure effective communication will vary in accordance with the length and complexity of the communication disability involved.

Example: Some individuals who have difficulty communicating because of a speech impairment can be understood if persons dealing with them merely listen carefully and take the extra time that is necessary.

Example: Colleges can provide oral directions or read written instruction to individuals with vision impairment. In many simple transactions, such as paying bills or filing applications, communication provided through such simple methods such as providing oral directions; will be as effective as the communication provided to other individuals in similar transactions.

Many interactions involve more complex or extensive communications than can be provided through such simple methods. Sign language or oral interpreters, for example, may be required when the information being communicated in a transaction with a deaf individual is complex, or is exchanged for a lengthy period of time. Factors to be considered in determining whether an interpreter is required include the context in which the communication is taking place, the number of people involved, and the importance of the communication.

Overhead #10
Compliance
Requirements

Title II requires that a public entity take several steps designed to achieve compliance. These include the preparation of a self-evaluation. In addition, public entities with 50 or more employees are required to:

1. develop a grievance procedure;
2. designate an individual to oversee Title II compliance;
3. develop a transition plan for structural changes necessary for achieving accessibility; and
4. retain the self-evaluation for three years.

Title III — Public Accommodations

Title III of the ADA covers:

1. Places of public accommodation;
2. Commercial facilities; and

3. Examinations and courses related to applications, licensing, certification, or credentialing for secondary or postsecondary education, professional, or trade purposes.

A place of public accommodation is a facility whose operations affect commerce and fall within at least one of the following 12 categories:

To Trainer: Read just a few examples to illustrate the point.

Handout #2
Places of Public Accommodation

1. Place of lodging (e.g. inns, hotels, motels) (except for owner-occupied establishments renting fewer than six rooms);
2. Establishments serving food and drink (e.g. restaurants and bars);
3. Places of exhibition or entertainment (e.g. motion picture houses, theaters, concert halls, stadiums);
4. Places of public gathering (e.g. auditoriums, convention centers, lecture halls);
5. Sales or retail establishments (e.g. bakeries, grocery stores, hardware stores, shopping centers);
6. Service establishments (e.g. laundromats, dry cleaners, banks, barber shops, beauty shops, travel services, shoe repair services, funeral parlors, gas stations, offices of accountants or lawyers, pharmacies, insurance offices, professional offices of health care providers, hospitals);
7. Public transportation terminals, depots, or stations (not including facilities relating to air transportation);
8. Places of public display or collection (e.g. museums, libraries, galleries);
9. Places of recreation (e.g. parks, zoos, amusement parks);
10. Places of education (e.g. nursery schools, elementary, secondary, undergraduate, or post-graduate schools);
11. Social service center establishments (e.g. day care centers, senior citizen centers, homeless shelters, food banks, adoption agencies); and
12. Places of exercise or recreation (e.g. gymnasiums, health spas, bowling alleys, golf centers).

The twelve categories are an exhaustive list. However, within each category the examples given are just illustrations.

B. Section 504 of the Rehabilitation Act

Section 504 of the Rehabilitation Act was the first federal anti-discrimination legislation that affected people with disabilities. Section 504's basic premise was that all federally funded agencies needed to provide equal access to their services for all people, including people with

disabilities. The definition of a person with a disability under 504 is essentially the same definition used in the ADA.

For those federal agencies not covered by the ADA, Section 504 provides the same requirements for employment and public services. While Section 504 does not have the specificity of the ADA regulations, it can be assumed that federal agencies will be held to the same regulatory standards as state and local agencies who are covered by the ADA.

An example of how Section 504 can impact on public agencies is the requirement that schools provide students with disabilities an equal opportunity to participate in school programs. For students with disabilities, this means that schools may need to make special arrangements so that these students have access to the full range of programs and activities offered; for example, installing ramps into buildings and modifying bathrooms to provide access for individuals with physical disabilities. Another example is providing alternative print format for required textbooks.

C. ADA Accessibility Guidelines

The ADA Accessibility Guidelines (ADAAG) contains standards for physical access such as accessible routes, protruding objects, ground and floor surfaces, stairs, elevators, rest rooms, pay telephones, and signage, etc. Specific guidelines are provided for types of facility access such as fixed seating areas or auditoriums, check-out aisles, sales and service counters, teller windows, information counters, automatic teller machines, hotels, motels, etc.

III. Steps to Determine Accommodations

Overhead #11
Cost and
Accommodation

There was a great deal of public comment regarding the cost of implementing the ADA. Some were concerned that people with disabilities would be coming forth in droves and requesting the most expensive of accommodations. Concern that many businesses would go out of business because of the expense of implementation was expressed. There have been situations where accommodations have been costly. But the Department of Labor did a study of the cost of the majority of accommodations which needed to be provided for disabled individuals in their work settings. This overhead describes the results of that study.

The steps needed to determine an accommodation are:

Overhead #12
Determining
Accommodations

Analyze
Analyze the specific skills of the job and the specific communication needs for the programs provided.

For communication — Identify the communications your agency is providing that are accessible to the person. What kind of information is not accessible and why? If print information is not accessible, is it text that you produced, commercially produced text, or other? How often does inaccessible visual information need to be utilized to effectively access your program? If auditory information is not accessible, is it live speech, signalling sounds, or other? How often does auditory information need to be accessed?

For jobs — List the tasks performed on the job. How often is each task performed? Are there some tasks performed less often that are as important to successful completion of the job as tasks done more frequently? How much time is allotted to a task?

Good job performance consists of performing what job functions? Ideally, the best way for you to get a feel for the job is to try it yourself!!

Consult
Consult with the person with a disability. Talk with the person with the disability to determine the precise job-related limitations or communication program access barriers caused by the disability. Identify how those limitations might be addressed with some type of accommodation or auxiliary aid or service.

Identify possible accommodations
Work with the person to list possible accommodations, auxiliary aids, and services that might enable the person to access the program effectively.

Possible accommodations:

a. *Modify the social environment*
   Be proactive in making an educational place "emotionally accessible." Stage open discussions with students, professors, and staff about disabilities.
b. *Modify the physical environment*
   Is there some physical change (raising a desk, changing a handle, moving furniture or fixtures, etc.) that would improve a person's academic performance?

c. *Provide special devices or equipment* (assistive technology)
Is there any item, piece of equipment, or product system that would improve ability to perform the job?

To Trainer: The agenda for this section of the module should be assigned based on the needs of the audience. The number and type of modifications presented needs to be determined based on the time available and the type of information in which the audience is interested. Each area covered will take approximately 10-15 minutes. The following areas will be covered: Visual, Auditory, and Physical.

Each of the following sections deals with accommodations based on how we interact with the environment. The accommodations are not specific to any one disability. They describe ways to provide alternative access to people who do not access the environment in a typical manner. For example, most of us use our ears to sense the ringing of a telephone, whereas it is just as logical to sense the ringing of a telephone by our eyes.

As the following information is presented, the audience should understand that there is a range of accommodations available on the market. These accommodations range from very simple "low technology" to complex "high technology." Often the more complex and sophisticated the technology used the higher the cost and in general more need for support services such as training and maintenance. Many people may need a range of equipment dependent on changes in the environments in which they interact. For example, a person with low vision may need a travel aid only when they are in a very low light environment or if they change from a high light to a low light situation.

Visual

Handout #3
Visual Info.

As you think about accommodations, consider the least restrictive piece of equipment and the particular needs of the person. Accommodations for people who are low vision/blind generally fit into a progression from enlarging/magnification to transformation of print to other formats such as braille and speech.

Print material should be made available in alternative formats including large print, braille, audio-type, and diskette.

There are many types of non-electronic magnifiers on the market. A hand held magnifier is a low-tech way for people to enlarge objects or print. Another example of the wide variety of magnifiers on the

Slide-
Variety of
magnifiers

market is a full-page magnifier with legs. If you look closely, you will see concentric circles on the page magnifier. This type of screen is called a frenzel lens. Its intention is to decrease the glare from direct lighting such as sunlight or overhead lights.

Slide-CCTV

There are also electronic devices such as *"Closed Circuit TVs (CCTV) which will allow for magnification. A CCTV is generally comprised of a monitor on which the print material is placed. CCTVs have a variety of features which should be discussed with the intended user to determine the best system. Some of the common features are: differing sizes of magnification; black on white or white on black print; blocking features which limit the amount of print on the screen, etc. Two of the issues with the use of CCTV is their size and weight which do not make them easily transportable. They are about the size and weight of a personal computer.

Slide-Magnicam

The *Magnicam is one of many portable devices which have many of the same features of the CCTVs but is light in weight and small enough to be easily transported. Magnicam is a camera with cabling which can be easily interfaced with a TV monitor allowing the user to magnify using a TV screen. Most homes and schools have TVs, so this is an easily used piece of equipment.

A person's vision loss may be at the point where he or she cannot use large print or magnification. If this is the situation, the person may choose to use an accommodation which transforms visual information into tactile format such as braille, or an auditory feedback format, or a combination of both, depending on the setting.

Braille

Braille is the process of using raised dots to read. Approximately 10% of people who are blind read braille. This is particularly true of people who lost their vision later in life, or for people who have learning disabilities. Braille can be produced in a variety of manners. To meeting particular environments and requirements.

Notetaking

If the situation requires taking notes, the person has the option of using a variety of notetaking devices. For example, the *Slate and Stylus is a portable, non-electronic device for braille notetaking. It costs approximately $5. It comes in different sizes and is made from a variety of materials. A person would use it by putting a piece of paper between the slots and then using the stylus to raise the dots. If the amount of notes to be taken is extensive and the person wants to manipulate the information on a computer he/she might choose to use the *Braille 'n

Speak which costs approximately $1,000. It is a portable, electronic-based device for braille notetaking and word processing. It has a ten-key braille keypad. A memory chip inside allows it to be used as a notetaker during meetings such as this one, a staff meeting, or for other types of meetings or classes the person is attending. Once the notes have been stored, the Braille 'n Speak has the ability to read then out loud with its speech chip.

Slide-
Perkins brailler

The production of braille for reading purposes is generally produced by one of two methods. The first are braillers, such as the *Perkins, which work much like a typewriter. The second method is to use a computer which will generate braille to a printer.

Auditory Feedback

Auditory feedback is becoming an accommodation which is available in an increasing number of devices. Remember, we talked about the fact that the larger proportion of people who need alternative access to print material do not read braille.

Tape recorder

Slide-
tape recorder

One of the most common notetaking devices is the tape recorder. There are many features available which make it easier for a person to use recorded tapes (e.g. raised symbols on control buttons, variable speech control, and the ability to index tapes so the complete tape does not need to be played to find a desired section of notes).

Slide-
examples of auditory feedback devices, talking calculators, talking watch, talking scale

There are many other common objects which have the ability of auditory feedback. A low-cost example of speech feedback is the talking calculator. The talking calculator has the same functions as a regular calculator but it has the capacity of speaking the numbers when a button is pressed. This same feature is available on watches, scales, thermometers, etc.

Optical Character Recognition

Slide-
Optical C.R.

*Optical Character Recognition (OCR) technology is developing quickly. OCR is an electronically based means to have print material read aloud. The method is the same for all OCR systems. The printed material would be placed on a scanning device. The material is scanned into a computer which then translates the visual print to auditory sound. The material would be read out loud through the OCR system.

Auditory feedback might also be the logical solution for other types of equipment, such as computers. There are many computer speech synthesizers which allow the user to hear what is on the screen.

There are also devices which are available to assist people who are blind in orienting themselves to their environment. For example, a transmitter could be strategically placed at differing points in the environment (i.e. along hallways, in theaters, on street corners). As the user walks along wearing a receiver he/she would receive auditory information regarding his/her position.

Consider how a person who is not a visual print user may be independent in accessing print through the above accommodations. The person would lay a book on a OCR which would read the print aloud while the person took notes on a Braille 'n Speak. The notes would be loaded into a computer with speech feedback and a braille printer. The person could enter notes, manipulate or edit them, and complete a written assignment based on print material without the assistance of human resources.

Signage

*Signage must be provided to inform people of accommodations which are available.

Auditory Information

Handout #4
Auditory Info.

To Trainer: For people who are deaf or hard-of-hearing, or who have speech disabilities, an accessible environment is one in which communication is not an obstacle. Hearing disabilities range from mild to profound hearing loss. Generally speaking, people who are hard-of-hearing have mild to severe hearing loss and often rely on amplification to assist in spoken communication. People who describe themselves as deaf generally have severe to profound hearing loss and rely heavily or entirely on visual modes of communication.

People who are deaf or hard-of-hearing communicate with hearing people in a variety of ways, including American Sign Language (ASL), Manually Coded (Signed) English, natural gestures, lip-reading, speaking, and speechreading. The particular modes used depend upon the individual's training, when the hearing loss occurred, the degree of hearing loss, and the particular circumstances in which communication takes place. Most deaf and some hard-of-hearing people whose hearing loss occurs congenitally or early in life identify with Deaf Culture and American Sign Language. Many people who become deaf later in life speak very clear spoken language, but use special methods to understand language of others. Each deaf or hard-of-hearing person uses the communication strategies which work best for him or her.

Amplification
Devices which amplify sound are an often requested accommodation, particularly for people who are hard-of-hearing. The generic name for devices which amplify sound is Assistive Listening Devices (ALD).

Slide-Assistive Listening Devices

*Assistive Listening Devices are comprised of three basic parts. There is a microphone which collects the sound from the source, there is a transmitter which sends the sound, and a receiver which amplifies the sound. The receiver is a part of the ALD and it comes in a variety of formats, such as headphones or neckloops. The primary issue with the type of receiver used is whether the person requires a direct feed of the sound to their personal hearing aids or not. There are many variations within each of these components which will effect the usefulness of the device requested.

The device pictured transmits through an FM frequency. There are three methods by which the sound is transmitted: FM, induction loop, and infrared light. Each has different considerations.

Comparison of Assistive Listening Devices

This particular unit has a volume control button on the receiver so you can adjust the volume to fit your needs. It transmits to a headset receiver as well as an in-the-ear receiver and earbuds. Other receivers might include telecoil neckloops, earbuds, etc.

When ALDs are available there should be signage signifying that they are available (Slide #71).

To Trainer: We will be discussing the transformation of auditory information to visual information. They are categorized below.

Transformation of Auditory Information to Visual Information

Interpreters
For people who prefer sound to be presented in a visual manner, one of the most familiar options is the use of interpreters. There are different types of sign language and the person who requests an interpreter should be asked which kind of sign language she/he will be using.

*Interpreters can work comfortably for about 45 minutes at a stretch. To provide quality services, two interpreters or stenotypists are generally needed for assignments lasting over two hours. During conferences or workshops, several interpreters are required. If services are needed for more than two hours and only one interpreter is available, at least one 10 to 15 minute break is recommended.

*Interpreters should always be in a visible, well-lit place near the presenters. When slides or films are shown, a spotlight or clamp-on light may be used to illuminate the interpreter. At all events, an area close to the interpreter and presenters should be reserved for people who are deaf or hard-of-hearing and for those sitting with them. In small group meetings, it is important that both the people who are deaf or hard-of-hearing and the interpreter sit where they can see and hear all participants. Round tables or circular seating arrangements are preferred.

Slide-
Signage for
Assistive
Listening Device

Artistic interpreters, who translate and interpret dramatic literature, plays, and concerts, require written material and recorded music up to eight weeks prior to the performance. Rehearsal with artistic personnel, such as performers or directors, is essential.

Realtime Reporter Services

*Realtime Reporter Services have become available as an option for people who read English fluently. Realtime reporters, trained as court stenographers, type what is said during a meeting. Text is immediately displayed on a computer monitor or projection screen.

Slide-
Realtime
reporting

Telephone

*The telephone is a device which is dependent on the use of auditory information without the benefit on any visual cues. There are several ways to accommodate for people who cannot use the standard telephone.

Telephone Amplifiers

There are three basic types of external amplification devices which can be used to amplify sound on the telephone. One is the type which is a couplet which is put over the receiver. The second is an in-line device which hook, via the telephone jacks, between the wall jack and the telephone receiver. The third is a handset which has the capability of amplifying incoming sound.

Slide-
external amp
handset amp

Text Telephone (TT)

*Text Telephone (TT) (also called a TDD or Telecommunication Device for the Deaf or TTY teletypewriter) is an electronic machine used with a telephone. The TT has a visual display and/or a printer so both the caller and receiver can type and read their conversation. TTs are easy to use and affordable. Prices range from $150 to $1000, depending on the features provided. You may decide to use a TDD on an existing phone line or get a separate dedicated line. Hotels with a TT at the front desk make it possible for guests who are deaf or hard-of-hearing to communicate their service needs.

Slide-
different TT
components

Emergency Warning Systems

Slide-
warning and
signaling devices

People who are deaf or hard-of-hearing may need warning systems which have both auditory and visual signals. A visual signal should operate simultaneously with an auditory signal (example: A large sign that flashes and beeps when the alarm system is activated).

Visual alarms are effective only when they are within the visual range of the intended user. Flashing white lights are the most effective in catching the attention of someone with a hearing disability. Flashing frequency should not exceed 3 Hz. Specify exit signs with internal flashing illumination.

*Recently developed portable alarm equipment may provide an alternative under some circumstances. For example, smoke detectors with built in radio transmitters can send out a signal that activates a remote receiver/alarm anywhere in a building. These alarms can be used at an individual's desk or workstation to alert him or her to an emergency by flashing a lamp, turning on a fan, or starting some other electrical device that attracts attention. These types of alarms are short-term solutions only, as they are not entirely reliable

Vibration

Slide-
Vibra
tactile devices

*Vibra-tactile or vibration is another option for transforming sound. Vibration is used most often in signaling devices.

The alarm clock pictured looks just like a standard alarm clock. It has an attached device which is put beneath the mattress. When the alarm goes off it will cause the vibrator to begin shaking and, hopefully, wake up the person who is using it.

The pager works on the same principle as the alarm clock. Users attach the vibrating device to their waistband. It will signal different sounds in the environment such as a baby crying, a telephone ringing, or a door bell.

Handout #5
Physical Access

Physical Access

To Trainer: <u>Facts on Physical Disabilities</u>/A physical disability is any condition which limits a person's ability to walk, move, or interact physically with the environment. People with physical disabilities may have limited muscular abilities, be paralyzed or missing parts of the body, have limited manual dexterity or a general lack of stamina, agility, coordination or balance. Some muscular conditions may affect speech and the ability to communicate easily. Augmentative communication devices can enable these people to communicate effectively.

People with physical disabilities may wear braces or special shoes, have artificial limbs, or use mobility aids such as wheelchairs, crutches, canes, or walkers, or they may use auxiliary aids and devices such as remote controls and adapted computers.

For people with physical disabilities, an accessible environment is one in which there are no physical barriers to spaces or services. Many people cannot climb stairs, walk long distances, open heavy doors, or turn doorknobs or faucets. With age, people may have decreased stamina, which can limit participation in community life. Stairs that are slippery and without handrails, or mats and carpets with unsecured edges, are safety hazards. Businesses are often located in spaces which have many architectural barriers, and can exclude people with mobility and dexterity limitations.

In addition, accessibility goes beyond simple building access to include adaptations and technology which can enable employees with disabilities to successfully perform their jobs. Computer communication devices, adapted work stations, paper handling aids, and other such accommodations all contribute to real accessibility.

Work Stations
The most beneficial adaptations are those that are individualized to the particular needs of any person. Below are some work site accommodation ideas. Many more are possible.

- a telephone with a speaker and headset;
- a personal computer, assistive software, and adaptive controls;
- a specialized chair;
- wheeled carts for carrying materials and for easy access to supplies;
- a sorting bin for papers, desktop files, and other organizers; and
- desks or tables raised on blocks of wood to accommodate a wheelchair.

Obstructing Objects
Remove objects that obstruct reach (e.g. an ashtray that blocks access to elevator call buttons).

Computer-Based Adaptations
When thinking about computer adaptations, think in terms of how a standard computer system is set up. It is expected that input will be done through a keyboard. The user needs the ability to push small keys in a sequential or chordic manner which requires good fine motor

skills. Output will be through a monitor and/or a printer both of which require a person to have visual skills.

Begin adapting by modifying or adding to the standard input method, which is the keyboard. There are many low tech, inexpensive ways to adapt a keyboard to accommodate for many different needs.

Slide-
Keyguard

*One such adaptation are keyguards. Keyguards simply lay on top of the keyboard, allowing a person who does not have steady motor control, to hit one key at a time. It may be useful for people who use headsticks to type, in that it prevents accidental striking of keys. It also provides a wrist rest for people who may not be able to hold their hands in a horizontal position. Some versions may have toggle switches which allow a person to physically hold down keys so that they can do those simultaneous keystrokes in sequential order. An example is the typing of a capitol letter. The user needs to hold down a shift key and the letter key. The toggle switch on this keyguard would allow the person to manually hold down the shift key while striking the letter key.

Slide-
Moisture guard
and keycaps

*Moisture guards are another wonderful low cost, low tech piece of equipment with multiple uses. The moisture guard was intended for use in protecting keyboards from people who drink liquids or eat crumbly food over their keyboards. But they can also be invaluable for any person, be it a young child or an older person, who has a problem with drooling.

*It also can afford the opportunity to increase the size of the character on the keyboard. If you notice letters on a standard keyboard do not utilize the full size of the keys and sometimes the letters have low contrast, being dark gray in character on a light gray surface. The moisture guard allows for easy, portable adaptations that are large letters, higher contrast letters. Even braille key tops can be purchased to put on a moisture guard.

The computer development industry has been giving increased attention to making computers, in general, more adaptable with built-in features. For example, the Apple Macintosh developers built in many memory resident features, such as the ability to do keystrokes in sequential rather than simultaneous order. If a typist wants to type a capitol letter, the shift key and the letter key have to be struck together. For people with physical disabilities, inability to perform this function independently can prevent them from full use of the computer. On the Macintosh the person would hit the shift key five times and then they would be able to hit the shift key, let it go and then hit the letter and

the letter would be capitalized. If a person who uses two hands begins typing, the computer would recognize that fact and default out of the sequential key mode.

IBM has developed a program called Access DOS which does this and other functions, making their computers more user friendly for people with disabilities. Access DOS is easy to use and is available free-of-charge.

The Macintosh has also built into its control panel a program called enLarge which allows a person with low vision to magnify the information on the monitor without any external software or equipment.

If the keyboard cannot be adapted to meet a person's needs, and the keyboard is not usable, consideration might be given to replacing the standard keyboard with an alternative input device, such as an adapted keyboard.

Slide-Comfort keyboard

*The Comfort keyboard was designed for a person who has repetitive motion syndrome. Repetitive motion is caused by the repetitive stroking of keyboards and the unnatural manner in which the hands are held and extended during keyboarding. The Comfort keyboard allows the user to place the keys in a more natural position, which is less stressful to the carpal tunnel muscles.

Slide-Alternative keyboards Intellikeys Mini-Tash

*Intellikeys is an alternative keyboard for the computer. It is very simple to use. Installation requires only plugging in the Intellikeys into the standard keyboard port. The standard keyboard can be plugged in at the same time. Intellikeys allows users to reconfigure the keyboard to meet their needs. Intellikeys comes with overlays which can easily be exchanged. The only activity needed to change the overlays is sliding out the current overlay and sliding in the new overlay. There is a magnetic strip on the back of the overlay that the computer reads automatically, so it knows immediately which overlay is being used. This alternative keyboard will work with all software. It does not require any special software.

If the person has very good muscle control but limited range of motion, the adaptation needed may be the Mini-Tash keyboard. The Mini-Tash is a small keyboard which is the size of a large index card. The keyboard has all of the keys which come on a computer keyboard. They are laid out in a different order so that the most often used keys are in the center, with the least used keys on the fringe. For a person with very limited range of motion but very good control this keyboard would let them use the full keyboard.

If the person cannot use alternative keyboards, another option is the use of a *switch. A switch on the computer will usually operate by one of two methods. The first is the use of a standard Morse Code system. The user would do a series of long and short taps on the switch to enter letters or commands. The other is a little more complex. That method is called scanning. A row of letters would appear on the computer monitor in what are called scanning arrays. The arrays would be highlighted, one at a time. When the array which holds the desired letter is highlighted, the user hits the switch. The letters would then be scanned, one at a time. When the desired letter is highlighted, the user would again hit the switch. The letter would be put on the monitor as if it had been selected on the standard keyboard.

Slide-
picture of
switches

*Another option which is available is the use of speech input. Speech input requires that the typist, with consistent speech patterns, say the commands and words to which she/he wants the computer to react. Some speech input systems only allow for commands through the speech mode, while others allow the person to complete all necessary work through speech input.

Slide-
picture of voice
input

Accommodations for Output

Some of the ways to adapt the output on a computer are:

Slide-
screen magnifica-
tion

- Replacing the standard size monitor screen with a larger monitor.
- *Screen magnification systems are typically software based. The images on the computer monitor would be enlarged from 2 to 40 times, depending on the command of the user.

Some of the options available for people who cannot read the screen, even with magnification are:

Slide-
computer with
speech output

- Speech — with the installation of a speech card and the appropriate software, the computer has the capability of reading the information on the monitor out loud.
- Refreshable braille — for braille users, an option might be the use of a refreshable braille keypad. This keypad would sit beneath the standard keyboard and raised braille cells would change as the words on the screen scroll by. The information on the screen is then read by the braille on the refreshable braille keyboard.

Augmentative Communication

Handout #6
Handout #7

To Trainer: There are an estimated 2 million people in the United States who can hear but who have difficulty with expressive communication. A communication disability can result from severe language delay, cerebral palsy, mental retardation, autism, traumatic brain injury, or stroke. A variety of specific neuromuscular disorders, such as amyotrophic lateral sclerosis, dystonia, Huntington's disease, multiple sclerosis, and muscular dystrophy can also cause speech problems. Occasionally, speech disabilities occur without an easily identifiable cause.

Over the past ten years, a whole new field of augmentative and alternative communication has been developed to support individuals with speech disabilities. A wide variety of augmentative communication devices now exists to help meet the communication needs of people who have difficulty speaking.

These devices range from simple communication boards on which a person points to letters, words, or pictures, to amplifiers, to sophisticated computer technology, including voice synthesizers.

Not all people with speech disabilities require the use of an augmentative communication device. People with cerebral palsy, for example, may have limited use of lip, tongue, and cheek muscles, which can distort articulation, while other muscle problems may interface with air flow and voice production. They may talk unintentionally on both the inhale and the exhale, and words spoken on the inhale are often not intelligible. In addition, they may articulate best in a whisper so that they do not have to concentrate on volume. With a listener's full attention and careful concentration, many persons with cerebral palsy and other physical disabilities can communicate orally.

Some people who have difficulty speaking may have other physical disabilities that affect their fine and/or gross motor skills. Since it may be difficult for them to use their hands, they may use a head pointer or a light stick attached to a headband to point to symbols on a communication board or to activate the computerized keyboard of their augmentative communication device. Most of these people are not deaf or hard-of-hearing, nor do they have cognitive disabilities. They hear and understand what is said to them.

There are many devices on the market which allow a person who is non-verbal or unintelligible to communicate. As with all of the demonstrations of equipment, I will do a brief overview of some of the augmentative equipment available. The device used to communicate through assistive technology is dependent on many factors such as the size of the vocabulary of the user, the motoric movement, and the situations in which the person will communicate, to name a few.

*It is vital that verbal and non-verbal communication begin as soon as possible. Communication may begin with non-electronic devices such as a simple communication board or book which allows the user to point to the word he/she wants to communicate. A communication board for a very young child or an older adult with a developmental disability may be as simple as one which has a real milk carton and a juice carton and the child points to the beverage of choice. It can progress up to a board such as this one. This board has pictures which allow the person to communicate by pointing to the pictures. Boards can be larger and have more complex sets of pictures, or sets depending on the situation. There could be one for home, one for school, and one for going to the movies.

Or the device might be a picture book. This particular book has pictures for a fast food restaurant. It has color coding to assist the person in quickly finding the appropriate section. The blue pages contain words for food, the white pages pictures for beverages, and the yellow pages pictures for money.

These devices are very inexpensive and easily made with materials in the environment. The vocabulary on them is limited to the pictures used. Both of them are non-electronic, so they do not have speech features.

Simple electronic devices

Slide-
Speakeasy

One simple electronic device which has auditory output is the Speak Easy. There are only twelve messages available at any one time. The speech is easy to understand because it is actually a recorded voice, but there is a two minute limit on the messages which can be recorded. The user cannot add or delete vocabulary. This unit costs $450 and is a very good beginning unit to introduce electronic devices. It may have very practical uses for a stroke victim who may regain speech but needs an intermediate unit that is relatively low in cost.

Slide-
Touch Talker

The Touch Talker has almost unlimited vocabulary that can expand with the user communication needs. These phrases can be programmed in by the user. It is a matter of pushing three buttons to tell the ma-

chine you will be programming in a phrase. After the phrase is typed in, the user listens to it and either changes it by phonetically spelling the words that do not sound correct, or by accepting the manner in which the Touch Talker is pronouncing the words. They then choose a button under which to put the word or phrase. It is pronounced when the appropriate button or series of buttons are pressed. Using more than one button to indicate a phrase expands the usability of the vocabulary. For example, if the user pushes the apple picture, which indicates food subjects, and then the school picture, the device might say, "I am hungry. When is it lunch time?" If the user pushes the apple and the doctor, the device might say "My stomach hurts." So it is not limited to one picture, one word or phrase.

This particular device is programmed for direct selection in that the user pushes individual buttons to activate the speech. However, if the person did not have the physical capability to push the buttons, it could be set to do scanning with a switch. The user would press the switch and the device might scan each row of pictures, going from top to bottom. When the scanning reached the row which contained the desired word or phrase, the user would push the switch again and the device would begin scanning across the row. Once the desired word or phrase was reached, the user would push the switch and the word or phrase would be spoken aloud.

This device is more expandable than the Speak Easy, but it also costs more. This device sells for around $5,000.

V. Conclusion

We have been talking about accessibility and accommodations and the issues that are a part of that. It is important to remember that accessibility is not only physical, but also involves communication and programs. When looking at how to accommodate individuals with disabilities, we need to remember there are many ways to make accommodations and many different types of assistive devices to use. If you have any comments or questions, please ask.

OVERHEADS

1. Types of Accessibility
2. Americans with Disabilities Act
3. Person With a Disability
4. Compliance Dates
5. Requisite Skills
6. Essential Functions
7. Accommodations
8. Undue Hardship
9. Qualified Individual
10. Compliance Requirements
11. Cost and Accommodation
12. Determining Accommodations

Overhead #1

TYPES OF ACCESSIBILITY

PHYSICAL

COMMUNICATION

PROGRAM

Overhead #2

AMERICANS WITH DISABILITIES ACT

Title I	**Employment**
Title II	**State and Local Government**
Title III	**Public Accommodations**
Title IV	**Telecommunications**

Overhead #3

PERSON WITH A DISABILITY

DISABILITY
SUBSTANTIALLY LIMITS A MAJOR LIFE ACTIVITY

RECORD
OF A DISABILITY

REGARDED
AS HAVING A DISABILITY

Overhead #4

COMPLIANCE DATES

25+ July 26, 1992

XXXXX XXXXX XXXXX XXXXX

15+ July 26, 1994

XXXXX XXXXX XXXXX

Overhead #5

Requisite Skills

✓ Experience

✓ Education

✓ Job-Related Requirements

Overhead #6

ESSENTIAL FUNCTIONS

Position existence

Limited number of employees

Highly specialized

Overhead #7

ACCOMMODATIONS

Application process

✓ ✓ ✓

Work environment

Manner performed

Overhead #8

UNDUE HARDSHIP

1. SIGNIFICANT DIFFICULTY

2. UNDULY COSTLY

- EXTENSIVE
- SUBSTANTIAL
- DISRUPTIVE
- ALTER NATURE

Overhead #9

QUALIFIED INDIVIDUAL

Reasonable Accommodation

Removal of Barriers

Provision of Auxiliary Aids and Services

Overhead #10

Compliance Requirements

Develop grievance procedure

Designate individual

Develop transition plan

Retain for 3 years

Overhead #11

COST AND ACCOMMODATION

- **51% of ALL Accommodations are made at NO COST to the Employer**
- **18.5% cost $1-$99**
- **11.9% cost $100-$499**
- **18.6% cost over $500**

(Source: Accommodations Study by Berkeley Planning Associates for the U.S. Department of Labor)

Overhead #12

DETERMINING ACCOMMODATIONS

Analyze job/communication needs

Consult with the person

Identify accommodations

HANDOUTS

1. Agenda/Objectives

2. Public Accommodations

3. Visual Information

4. Auditory Information

5. Physical Access

6. Sensitive Communication

7. Cognitive Disability

Handout #1

AGENDA

1. STEPS TO DETERMINE ACCOMMODATIONS
2. TYPES OF ACCOMMODATIONS

OBJECTIVES

1. REVIEW STEPS NECESSARY TO CONSIDER PROVIDING A REASONABLE ACCOMMODATION OR AUXILIARY AIDS AND SERVICES.
2. BECOME AWARE OF A VARIETY OF ACCOMMODATIONS RANGING FROM SIMPLE TO COMPLEX, EXPENSIVE TECHNOLOGY.

Handout #2

PUBLIC ACCOMMODATIONS

Public accommodations fall into the 12 categories listed. This is an exhaustive list with examples given for illustration:

Places of lodging
(e.g., inns, hotels, motels) (except for owner-occupied establishments renting fewer than six rooms);

Establishments serving food or drink
(e.g., restaurants and bars);

Places of exhibition or entertainment
(e.g., motion picture houses, theaters, concert halls, stadiums);

Places of public gathering
(e.g., auditoriums, convention centers, lecture halls);

Sales or retail establishments
(e.g., bakeries, grocery stores, hardware stores, shopping center);

Service establishments
(e.g., laundromats, dry cleaners, banks, barber shops, beauty shops, travel services, shoe repair services, funeral parlors, gas stations, offices of accountants or lawyers, pharmacies, insurance offices, professional offices of health care providers, hospitals);

Public transportation terminals, depots, or stations
(e.g., not including facilities relating to air transportation);

Places of public display or collection
(e.g., museums, libraries, galleries);

Places of recreation
(e.g., parks, zoos, amusement parks);

Places of education
(e.g., nursery schools, elementary, secondary, undergraduate, or postgraduate, private schools);

Social service center establishments
(e.g., day care centers, senior citizen centers, homeless shelters, food banks, adoption agencies); and

Places of exercise or recreation
(e.g., gymnasiums, health spas, bowling alleys, golf centers).

Handout #3

Visual Information

Knowing when and how to assist a person who is blind or visually impaired can make a big difference in the experience a person has with your business. The following tips can help:

- It is appropriate to lightly touch the person's arm after you have spoken so that they know you are speaking to them.
- Don't leave without saying you are leaving.
- If you are offering directions, be as specific as possible, and point out obstacles in the path of travel. Use clock clues ("The door is at 2 o'clock").
- Alert people to posted information.
- Never move someone's cane.
- Never pet or otherwise distract a guide dog unless the owner has given you permission. (Rule of thumb is not to ask to pet a guide dog.)
- You may offer assistance if it seems needed, but if your offer is declined, do not insist. If your offer is accepted, ask the person how you can best help.
- Don't take a person's arm to direct them. You may offer ("Would you like to take my arm?"), and they will then accept or decline.
- If a person has taken your arm, be sure to alert them before reaching a step or a set of stairs, or other level changes. Approach steps directly, not at an angle. Tell the person whether stairs go up or down, and mention when the last step is reached.

Handout #4

Auditory Information

Whether you are communicating through an interpreter, speech reading, or using paper and pencil, communication with a person who is deaf or hard of hearing will be more effective if you apply the following points of etiquette:

- Ask the person how he or she prefers to communicate.
- If you are speaking through an interpreter, remember that the interpreter may lag a few words behind-- especially if there are names to be fingerspelled--so pause occasionally to allow him or her time to translate completely and accurately.
- Talk directly to the person who is deaf or hard of hearing.
- Before you start to speak, make sure you have the attention of the person you are addressing. A wave, a light touch on the shoulder, or other visual or tactile signals are appropriate ways of getting the attention of a person who is deaf.
- Speak in a clear, expressive manner. Do not over-enunciate or exaggerate words.
- Face the person and directly to them using a normal tone of voice.
- If you are writing a message, don't talk at the same time.
- If you do not understand something that is said, ask the person to repeat it or write it down. The goal is communication; do not pretend to understand if you do not.

- If you know any sign language, try using it. It may help you communicate, and it will at least demonstrate your willingness to meet the person halfway.

- Ask for clarification if you do not understand what they are saying. Ask for the message to be repeated if you do not understand.

- To obtain information quickly, ask short questions that require brief answers or a head nod.

Handout #5

Physical Access

- A smooth, firm pathway of non-slip material, at least 36 inches wide and with no unramped changes of level, leading from the parking area and the boundary of your site to an entrance

- A pathway connecting separate buildings or activity areas within the same site

- Doorways with 32 inches minimum clear width and adapted with easy-to-use accessible hardware, such as lever handles

- A 36 inch wide path of travel with no unramped changes of level connecting activity areas within the building

- Rest rooms adapted for people using wheelchairs: an enlarged stall with grab bars and an accessible toilet, a five foot turning space in the communal area of the rest room, a sink with adequate knee clearance, and fixtures with level handles that can be readily used by everyone

- Corridors, meeting spaces, and work spaces free from obstacles

Some barriers can be removed very quickly. The following changes can instantly create a more accessible environment for people with physical disabilities.

<u>Path of Travel</u>

- Designate parking for people with disabilities as close as possible to the accessible entrance.

- Rearrange furniture and remove obstacles so that people using wheelchairs have a 36 inch clear path of travel, and a 5 foot diameter space wherever a 360 degree turn in necessary.

- Securely anchor carpets and mats to floor surfaces.

- Replace grates with ones that have openings less than ½ inch wide.

Doors

- At inaccessible entrances, place signs bearing the International Symbol of Accessibility and an arrow indicating the location of the accessible entrance.

- Replace doorknobs with level or loop handles. Good looking adapters which fit over existing knobs are available.

- Remove or lower thresholds, or add a wedge from both sides of threshold to ease movement and prevent tripping.

- Replace revolving doors with accessible manual or automatic doors, or provide an accessible, unlocked door adjacent to revolving doors.

- Install doormats that are ½ inch thick or less.

Stairs, Ramps, and Elevators

- Hold meetings and events in spaces which do not require climbing stairs.

- Add non-slip treads to stairs.

- Provide handrails on both sides of stairs for safety.

- Construct simple wooden ramps for limited rises of 5 to 7 inches. Any ramp should comply with state and federal width, slope, and handrail standards, to ensure safety. You can carpet interior ramps to blend in with the decor.

- In elevators, if it is not feasible to relocate the control panel to an accessible height, provide a reaching stick on a chain so that everyone can reach the controls.

Rest rooms

- Install a handle on the inside of stall doors.

- Replace stall door hinges with self-closing type.

- Relocate coat hood to a maximum height of 54 inches above the floor.

- Install slide bar latches.

- Install continuous-flow toilet paper dispensers.

- Relocate toilet paper dispenser to the side wall next to the toilet, 24 inches above the floor.

- Install paddle faucet controls.

- Provide knee space below the sink, 27 inches high, 30 inches wide, and 22 inches deep.

- Relocate paper towel and other dispensers to a maximum of 42 inches high.

- In kitchen and bathroom, relocate cabinet handles to the top of base units and the bottom of wall units.

Controls

- Lower operative parts of wall-mounted telephones to an accessible height, 48 inches maximum.

- Provide reaching sticks or extensions for inaccessible switches and controls.

- Provide remote control systems for lights and equipment, located within reach of a person sitting in a wheelchair, no higher than 48 inches.

- Move light switches in employee's work station to a minimum height of 15 inches.

Handout #6

Sensitive Communication

People with disabilities will feel most comfortable if the members of your organization are familiar with some basic rules of conduct:

- Do not push a person's chair or grab the arm of someone walking with difficulty, without first asking if you can be of assistance. Personal space includes a person's wheelchair, crutches, or other mobility aid.

- If you offer assistance and the person declines, do not insist. If the offer is accepted, ask how you can best help, and follow the directions. Do not take over.

- Talk directly to the person with a disability, not through a third person.

- Never move someone's crutches, walker, cane, or other mobility aid with permission.

- Do not make assumptions about what a person can and cannot do. A person with a physical disability is the best judge of their own capabilities.

When talking with people who have difficulty speaking, keep the following in mind:

- Talk to people with speech disabilities as you would talk to any person.

- Be patient, it may take a while to answer.

- Give your undivided attention.

- Be friendly. Start up a conversation.

- Ask for assistance in communicating. Often, there are printed instructions on communication devices that explain how to use them to communicate.

- Speak in your regular tone of voice.

Handout #7

Cognitive Disability

When speaking to someone who has a cognitive disability, try to be alert to their responses so that you can adjust your method of communication, if necessary. For example, some people may benefit from simple, direct sentences, or from supplementary visual forms of communications, such as gestures, diagrams, or demonstrations.

- Use language that is concrete rather than abstract. Be specific.
- Repeat information using different wording or a different communication approach, if necessary. Allow time for the information to be fully understood.
- Don't pretend to understand if you do not. Ask the person to repeat what was said.
- In conversation, people with mental retardation may respond slowly, so give them time. Be patient, flexible, and supportive.
- Some people who have a cognitive disability may be easily distracted, or, conversely, may be quite attentive and concentrate very closely. Don't interpret these behaviors as rudeness; there may be possible reasons for them.
- Do not expect all people to be able to read well. Some people may not read at all.
- Be selective in job placement. Match each person's strengths to work that best suits him or her.
- People visual perceptual problems may prefer verbal directions, and may need extra time to complete an assignment. They may

need their written work checked for grammar and word or number reversals.

- People who have auditory and perceptual problems may require a longer training time than other employees.

- Treat adults with cognitive disabilities as adults.

Information and Referral Resources

The following is a partial list of agencies which may be of assistance in answering assistive technology related questions.

Missouri Assistive Technology Project
4731 South Cochise, Suite 114
Independence, MO 64055-6975
(800) 647-8557 (V)
(800) 647-8558 (TDD/TT)

ADA Consulting Group
4816 Santana Circle
Columbia, MO 65203
(314) 882-3600

Governor's Committee on Employment of
People with Disabilities
3315 W. Truman Blvd.
Jefferson City, MO 65109
(800) 877-8249

Missouri Assistive Technology Demonstration Centers

Center for Assistive Technology
3100 Main, Suite 303
Kansas City, MO 64111
(816) 931-2121

ACTT Demonstration Center
Southwest Center for Independent Living
1856 East Cinderella
Springfield, MO 65805
(800) 676-7245

St. Louis Technology Access Center
12110 Clayton Road
St. Louis, MO 63131
(314) 569-8400 (V/TDD)